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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,564	10/16/2003	Hyung-Wan Kim	Q76811	7174
23373	7590	04/06/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			LAXTON, GARY L	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/685,564	Applicant(s) KIM ET AL.	
	Examiner Gary L. Laxton	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-17 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2 and 4-13 is/are allowed.
- 6) ☒ Claim(s) 14-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 14-17 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art figure 1 (APA figure 1) in view of Williams (US 5,956,240) and further in view of Arai et al (US 6,181,101) and still further in view of Wong et al (US 6,775,164).

APA figure 1 discloses the claimed subject matter in regards to claim 1 except for the controlling unit senses a voltage at the output and interrupts supplying of the second DC power to the switching controlling unit if the sensed voltage exceeds a given value and except for the fault controller being operable to sense both overvoltage and undervoltage.

Williams teaches senses a current at the output and interrupts supplying of the second DC power to the switching controlling unit (U1) if the sensed current exceeds a given value (col. 7 lines 3-25).

Williams therefore, discloses sensing for overcurrent conditions and not overvoltage conditions. However, it is obvious to those of ordinary skill in the art to readily recognize the ability to sense for overcurrent conditions or overvoltage conditions.

For example, Arai et al teaches substituting the sensing of one condition with the sensing of the other condition. Specifically, Arai et al teach that FIG. 6 is a schematic structure diagram of an over-current protective circuit which substitutes the over-voltage countermeasure circuit; and furthermore, Arai et al teach that the over-voltage countermeasure circuit is constructed as shown in FIG. 3, it is permissible to connect a thermal FET to FET in parallel as shown in FIG. 6, detect a difference of voltage between the sources thereby detecting a tendency of the over-current, and turn OFF the FETs when it is determined that there is a possibility that a short-circuit occurs. And still further, instead of the over-voltage countermeasure circuit according to the second embodiment, it is permissible to provide with a circuit for preventing an over-current as shown in FIG. 6.

Furthermore Wong et al teach a fault controller that senses both overvoltage and undervoltage in order to react to either condition (col. 7 lines 35-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the APA figure 1 to include a controlling unit which senses a voltage at the output and interrupts supplying of the second DC power to the switching controlling unit if the sensed voltage exceeds a given value as taught by Williams and Arai et al in order to protect the controlling unit from fault conditions that includes overvoltage and undervoltage as taught by Wong et al.

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4. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art figure 1 (APA figure 1) in view of Williams (US 5,956,240), Arai et al (US 6,181,101) and Wong et al (US 6,775,164) further in view of Melchert et al (US 6,657,841).

The admitted prior art figure 1, Williams, Arai et al and Wong et al disclose the claimed subject matter in regards to claim 14 supra, except for a zener diode with the anode connected to a base of a transistor and further connected to the cathode of another diode and divider.

Melchert et al teach connecting a zener diode (Z) to the base of a transistor (T2) and another diode (D) and voltage divider (R1, R2 or V2) in order to provide a circuit arrangement for the overvoltage protection of a power transistor.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the APA figure 1 to include a zener diode with the anode connected to a base of a transistor and further connected to the cathode of another diode and divider as taught by Melchert et al in order to provide a circuit arrangement for the overvoltage protection of a power transistor.

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Allowable Subject Matter***

6. Claims 1, 2 and 4-13 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: the reasons for indicating allowable subject matter as the same as stated in the previous office action dated 10/21/04.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 4-4-05  
Gary L. Laxton  
Primary Examiner  
Art Unit 2838